



NASA Technology Infusion Road Tour
New Mexico State University
August 13-14, 2019

MUREP Overview

Torry Johnson, MUREP Manager
NASA HQ Office of STEM Engagement
Washington, DC

Minority University Research and Education Project



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NASA Office of STEM Engagement



Vision

We immerse the public in NASA's work, enhance STEM literacy, and inspire the next generation to explore.

Mission

We engage the nation in NASA's mission

FOCUS AREAS



Create **unique opportunities** for students and the public to contribute to NASA's work in exploration and discovery.



Build a **diverse future STEM workforce** by engaging students in authentic learning **experiences** with NASA's people, content and facilities.



Strengthen **public understanding** by enabling **powerful connections** to NASA's mission and work.



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MUREP at a Glance

NASA Mission Directorate Drivers & Requirements

At A Glance:

- Limited to Minority-Serving Institutions
- Responsive to Presidential Executive Orders
- Diverse Portfolio

Elements of Approach:

- Student Engagement Opportunities
- MSI Partnerships and Sustainability
- Mission Directorate Collaborations
- K-12 Engagement

Impact:

- Contribute to solving Mission Directorate problems
- Increased STEM Awareness
- Increase retention of Underserved and Underrepresented groups in STEM
- Enhance MSI infrastructure and sustainability

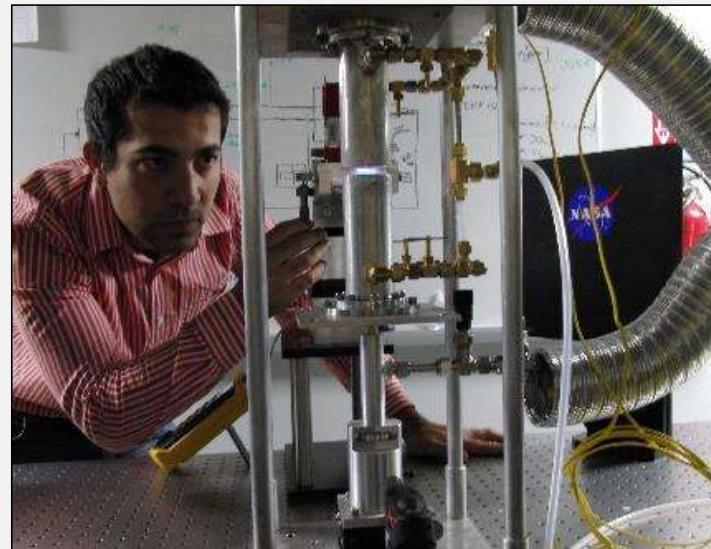


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MUREP Vision



To enhance the **research, academic and technology capabilities** of **Minority Serving Institutions (MSIs)** to provide authentic learning experiences to students related to **NASA missions** to contribute to a **diverse future STEM workforce**.

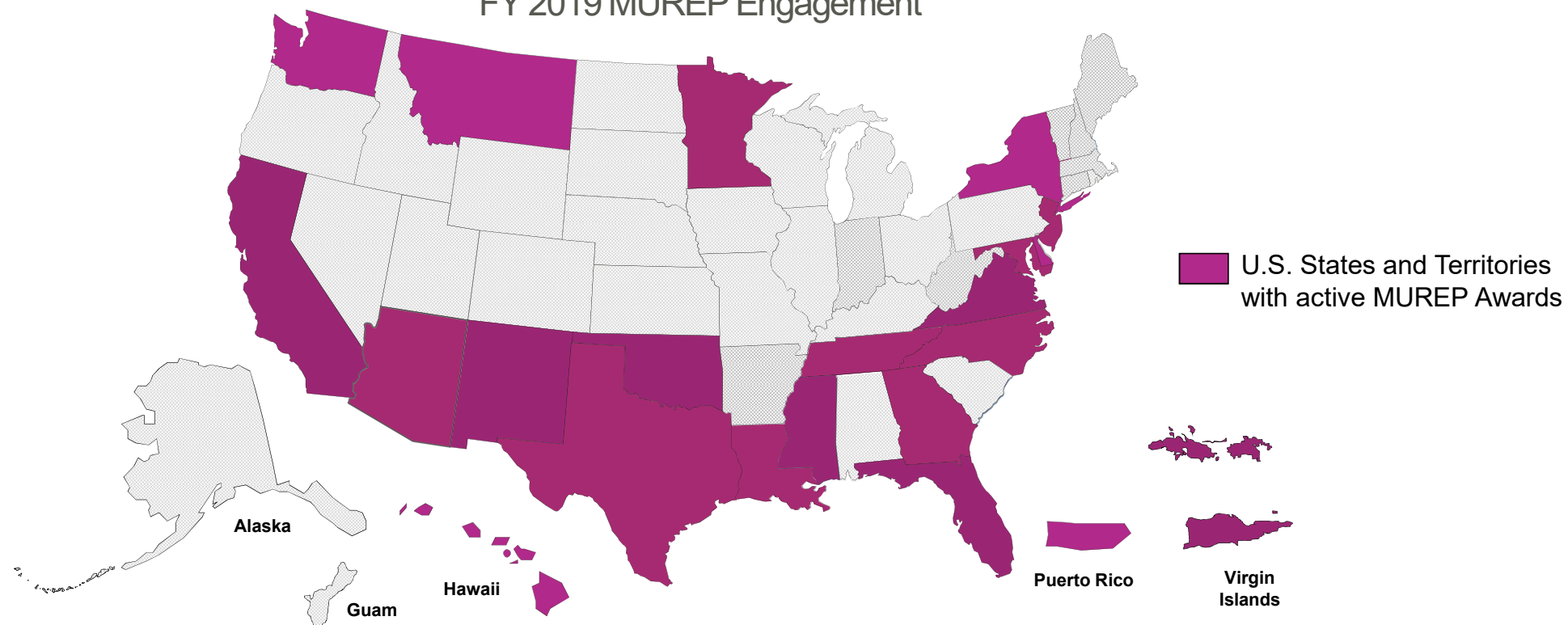


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MUREP at a Glance

FY 2019 MUREP Engagement



MUREP K-12 Engagement



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MUREP Aerospace Academy (MAA)



MAA 2015 – 2018 Awards

- **Nine** Cooperative Agreements with MSIs
- Student Reach: **18,562**
- Educator Reach: **2,291**

MAA 2.0 FY 2018 Awards

- Albany State University
- California State University, Fresno
- Elizabeth City State University
- Navajo Technical College
- Tennessee State University
- Texas State University, San Marcos
- University of Texas at El Paso



MAA 2.0 FY 2019 Awards

- Florida Atlantic University
- Hartnell Community College
- Morgan State University
- San Jacinto Community College
- University of California, Riverside
- CUNY/ York College



At a Glance



MUREP Educator Professional Development Collaborative (EPDC)



Partnerships

15 MSI TEN Partners
117 Emerging Stars
Partners



Digital Badging System

464 Badges earned
this year;
4009 Professional
Development Hours
earned



Events

483 Events,
including Webinars,
Face to Face (on-
site/off-site)

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Community College & Tribal College Engagement



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At a Glance



MAIANSE

MUREP for American Indian and Alaska Native STEM Engagement



Student Engagement

 **237** Students from American Indian Serving Schools

Participated in NASA Internships and Fellowships from 2011-2018



Capacity Building

 **11** Cooperative Agreements

With Tribal Colleges and Universities across the US since 2014



Building Relationships

 **21 of 38** TCUs

Visited by MAIANSE staff

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MUREP Innovations in Space Technology Curriculum (MISTC)

MISTC awards prepare, train and develop NASA's future workforce through innovations in **community college** curriculum and experiential learning opportunities that are aligned with the priorities of NASA's Space Technology Mission Directorate (STMD).



NEW COHORTS



Group 1: Bronx Community College,
College of the Desert, Los Angeles
Pierce College, Passaic County
Community College, Prince George's
Community College



Group 2: Delgado Community
College, Queensborough Community
College

KEY OUTCOMES



New and revised courses focused on areas of priority for NASA STMD



Student internships at NASA Centers



Increased research, teaching and learning capability in NASA related fields for community college MSIs



NASA PARTNERS



NASA Goddard Space Flight Center



NASA Jet Propulsion Laboratory



NASA Marshall Space Flight Center



Competitions



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NASA COMMUNITY COLLEGE
NCAS
AEROSPACE SCHOLARS



NASA on Campus

Evidence based engagement model developed at NASA to transform community college students' STEM experience.

Becoming a Partner

Funding awarded to 2-year MSI institutions who partner with NCAS to provide the **NASA on Campus** experience through their state Space Grant.



Eligibility

- US Citizenship
- High school graduate or equivalent and at least 18 years of age
- Registered at a US community college during NCAS
- Completion of or enrollment in 9 or more semester hours or credits of STEM coursework

What's Next for NCAS?

- First on-campus NCAS experience at the College of the Desert in one week.
- Recruiting new students Aug 28-Oct 23, 2019.

Learn more at go.nasa.gov/ncas

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MUREP Innovation & Tech Transfer Idea Competition (MITTIC)

Spinoff Challenge for Multi-Disciplinary Student Teams

<https://microgravityuniversity.jsc.nasa.gov/nasamittic.cfm>

Student Teams from MSIs:

- Selected a NASA Technology (IP) from a list of 20 options
- Developed a concept paper highlighting commercial viability
- Submitted the concept paper via NSPIRES for competitive review

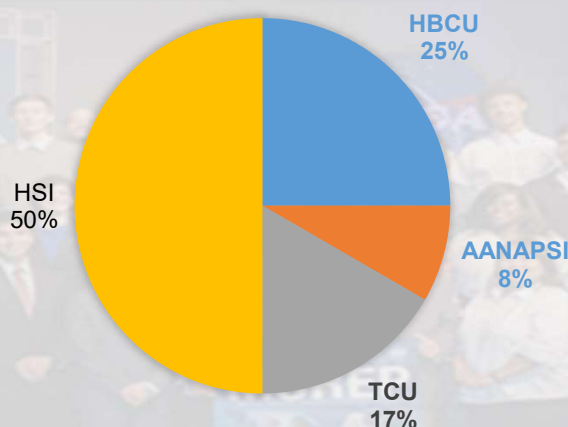
After Competitive Review:

- 10 teams were down-selected to compete in a “Space Tank” & participate in private tours at JSC
- One winning team was selected by judges to participate in an immersion at ARC & in Silicon Valley.



10

Finalist Teams
Visited JSC



1

Winner

El Camino
College
Torrance, CA

POCS: Misti Moore, NASA Johnson Space Center
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Research Capacity and Infrastructure at MSIs



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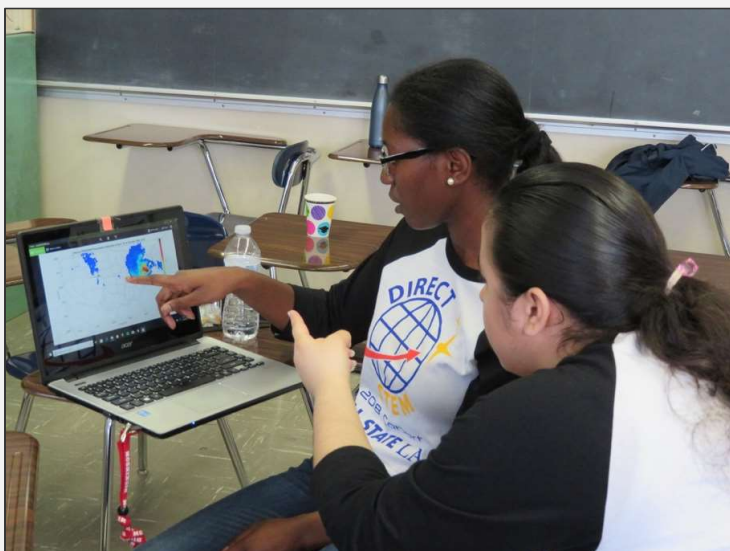


MUREP Institutional Research Opportunity (MIRO)



- **Promote** institutional research capacity at Minority Serving Institutions
- **Increase** workforce diversity
- **Expand** Aerospace Research
- **Strengthen** STEM skills

MIRO Cooperative Agreements



- \$3 million total per institution
- 3 year awards
- NASA Center Collaborator
- Academic Partner
- External Advisory Committee
- Technical and Education Subject Matter Experts
- MIRO Team

At a Glance



MIRO Awardees

MIRO Group 7

- California State University, Northridge
- City College of New York
- Prairie View A & M University
- University Of Arizona
- University Of Puerto Rico, Rio Pedras
- University Of Texas, San Antonio
- University of the District of Columbia
- Florida International University
- University of California, Merced
- Hampton University
- San José State University
- Langston University
- Xavier University of Louisiana
- Delaware State University
- California State University, Los Angeles
- University of California, Riverside
- The University of Texas at El Paso
- University of the Virgin Islands

MIRO Group 6



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Sustainability



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MUREP for Sustainability and Innovation Collaborative (MUSIC)

74 MSIs

57 HBCUs, 12 HSI, 3 ANAPISIs, 2 TCUs participated in MUSIC activities.

Institutional Capacity



MUSIC is collaborative
What's Exciting?



Increasing MSI's capacity to compete for federal funds.

Access and Exposure 259 participants

MUSIC interacted with 259 participants through webinars and workshops.



MUSIC participant Alabama A&M University was selected for a 2019 NASA SBIR/STTR award

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MUREP Aerospace High Volume Manufacturing and Supply Chain Management Cooperative

Proposal deadline is **August 23rd**. Solicitation may be found <https://nspires.nasaprs.com>



ARMD Mission Work

Addresses mission framework needs by introducing new high volume, aerospace manufacturing networks.



50+

Proposals from MSI Led Teams In US States and Territories

MSIs should develop diverse teams of schools, industry and gov't.



Up to \$500k/award

3 Awards planned

Based on proposals of adequate merit.

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MUREP Sustainability Initiative

Supports capacity building at MSIs by increasing awareness of NASA and non-NASA opportunities.



Internal / External
Partnerships

Aligned to
Mission
Directorate
Needs and
NASA Offices



135

HBCUs, HSIs,
TCUs
AANAPISIs,
PBIs,
ANNHSIs,
NASNIs



Engagement
Activities

26

U.S. and US
Territories





MUREP Sustainability Initiative

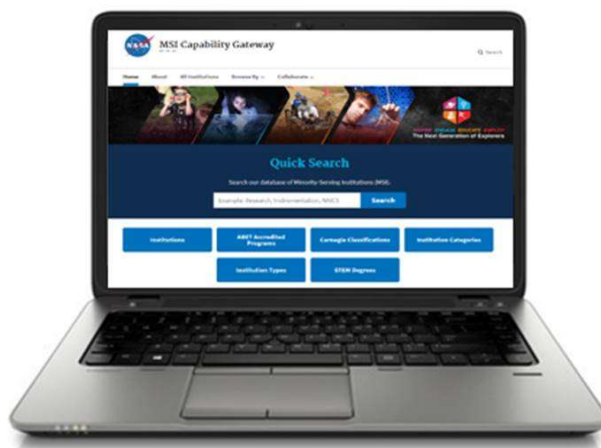
Supports capacity building at MSIs by increasing awareness of NASA and non-NASA opportunities.



700+ MSIs

All Minority Serving Institutions

HBCUs, HSIs, TCUs
AANAPISIs, PBIs,
ANNHSIs, NASNIs



100+

Capability Statements

University Research
Centers and Expertise



MUREP At Work



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